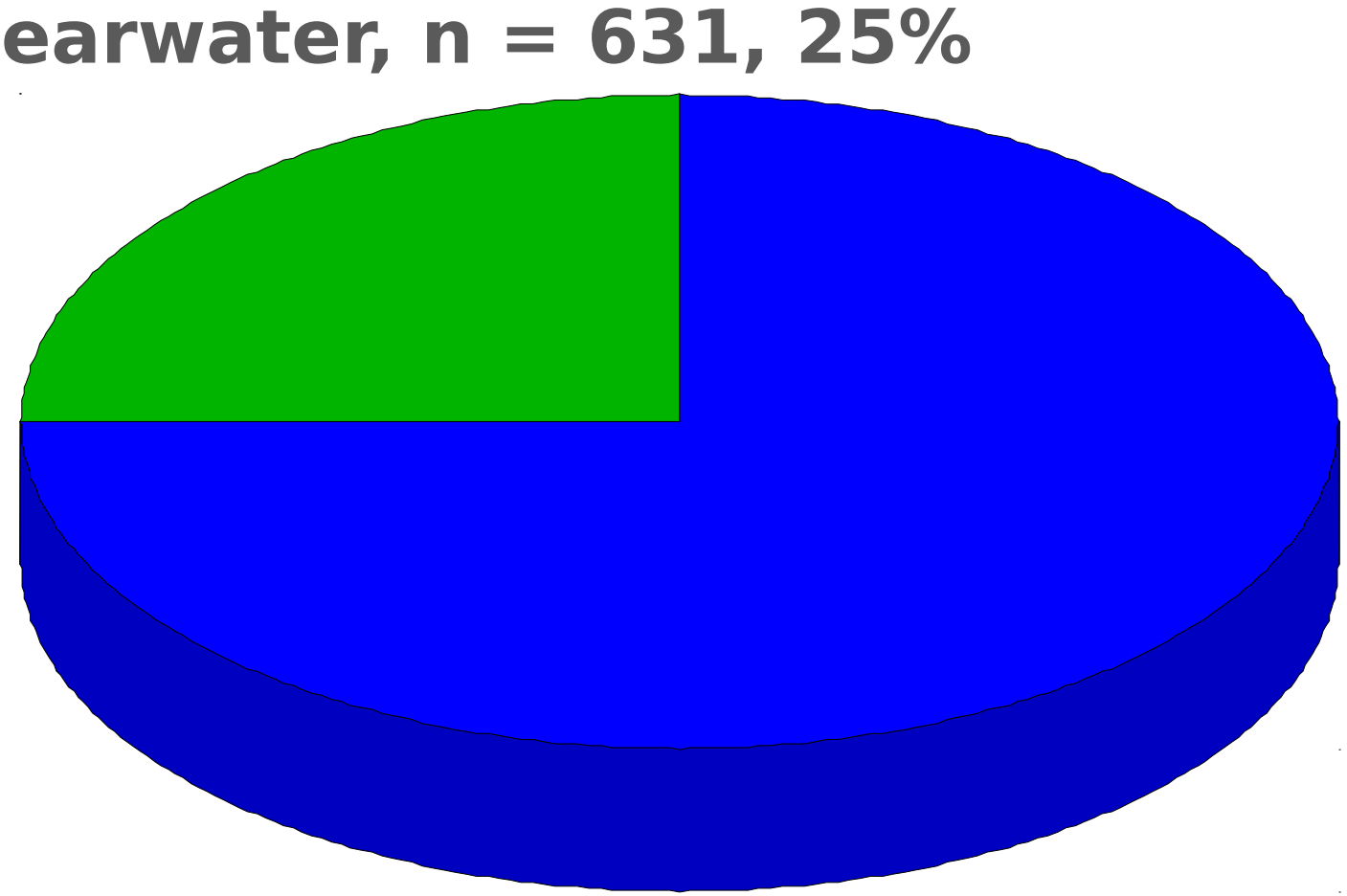
Post-release attributes of Lyons Ferry Hatchery fall Chinook salmon subyearlings released into the Snake River as surrogates for wild fall Chinook salmon subyearlings

A study to compare SARs of Snake River fall Chinook salmon under alternative transportation and dam

Basin-wide Redd Distribution (200



Groups of PIT-tagged fall Chinook salmon subyearlings that provided comparing post-release attributes for this presentation.

Release dates

Origin	Group	Release site	Number tagged	Min	Max
Wild	Wild	Snake	9,301	14-April	05-July
Hatchery	Surrogates	Snake	124,448	16-May	27-May
Hatchery	Production	Hells Canyon Dam	9,972	28-April	28-April
		Pittsburg Landing	2,492	26-May	26-May
		Captain John Rapids	3,494	25-May	30-May
		Couse Creek			

Mean fork length at PIT tagging

Wild ***N*** **= 9,300 68 ± 7 mm**

Surrogate ***N*** **= 123,380 76 ±**

Production ***N*** **= 12,918 86 ±**

Attributes compared among groups

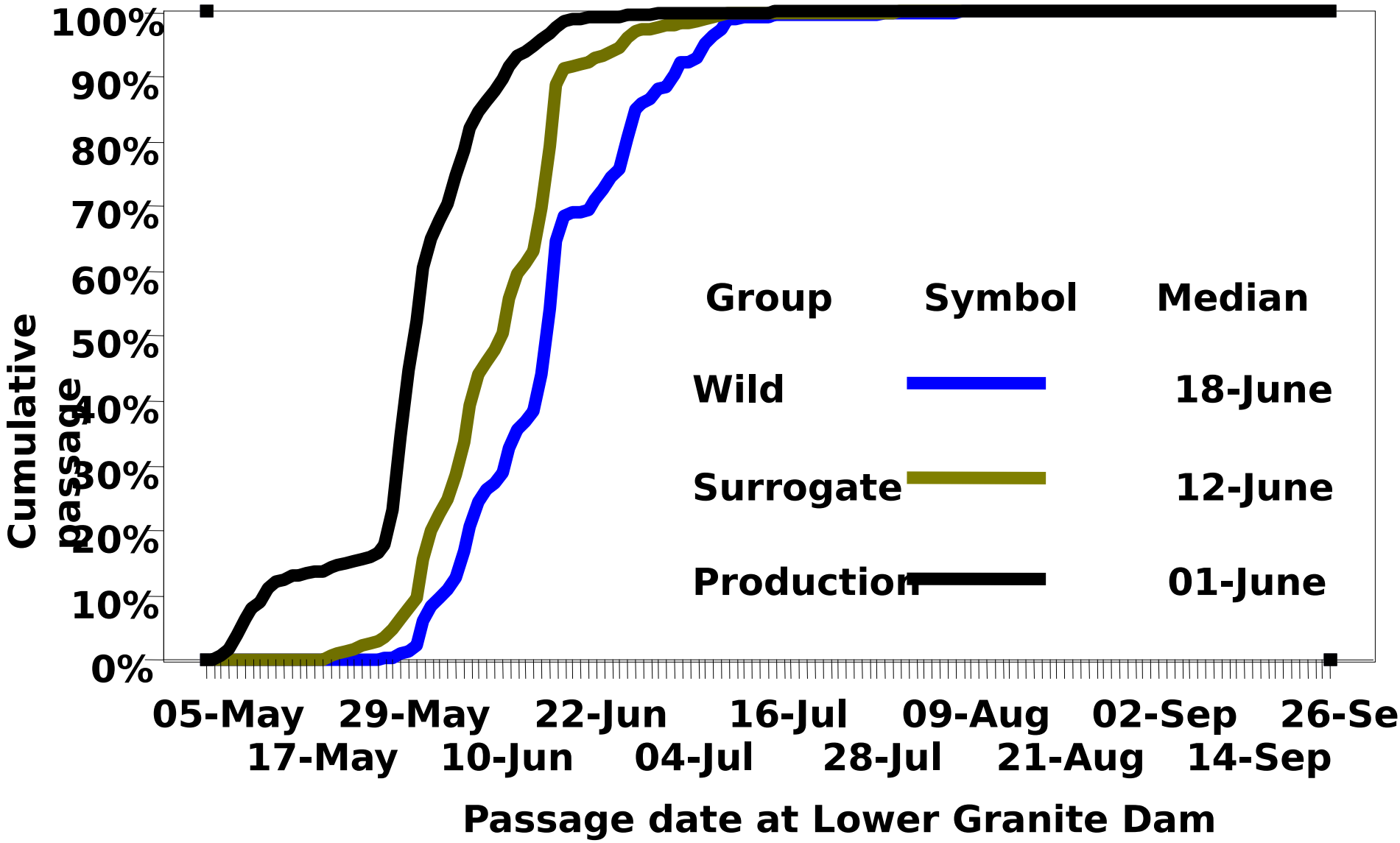
- Passage timing at the first three lower Snake Riv
- Level of exposure to spill at the first three lower
  River dams
- Travel time to Lower Monumental Dam
- Joint probability of actively migrating and surviv
  pass Lower Monumental Dam

Use of the Sandford and Smith (2002) Met
Estimate Daily Passage:

$$\hat{n} = n / \hat{P};$$

where n = observed PIT-tag detections

and ^P = estimated detection probability.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Cumulative passage
Group
Symbol
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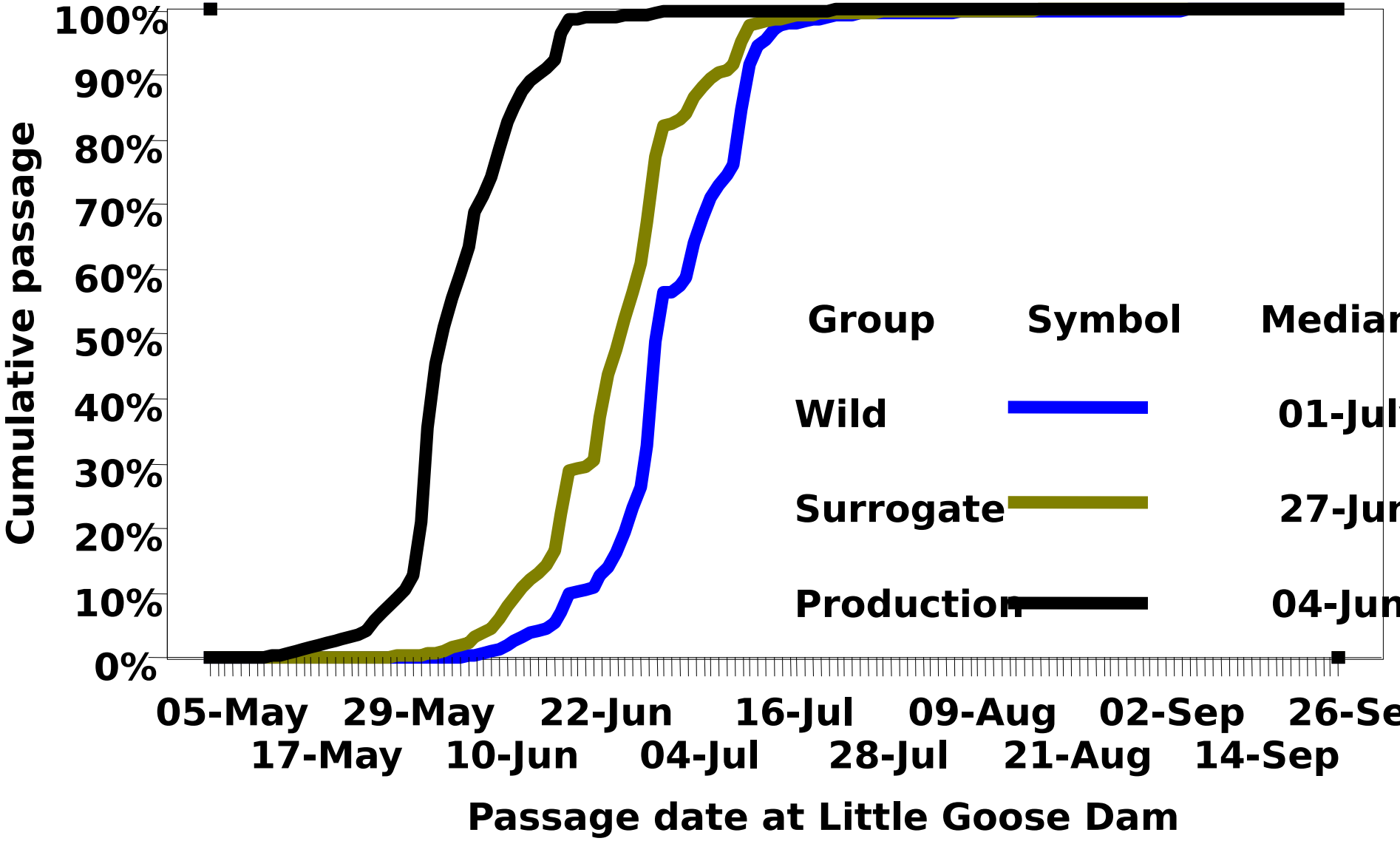
18-June
Surrogate
12-June
Production
01-June
05-May
17-May
29-May
10-Jun
22-Jun
04-Jul
16-Jul
28-Jul
09-Aug
21-Aug
02-Sep
14-Sep
26-Se
Passage date at Lower Granite Dam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Production
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10-Jun
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28-Jul
09-Aug
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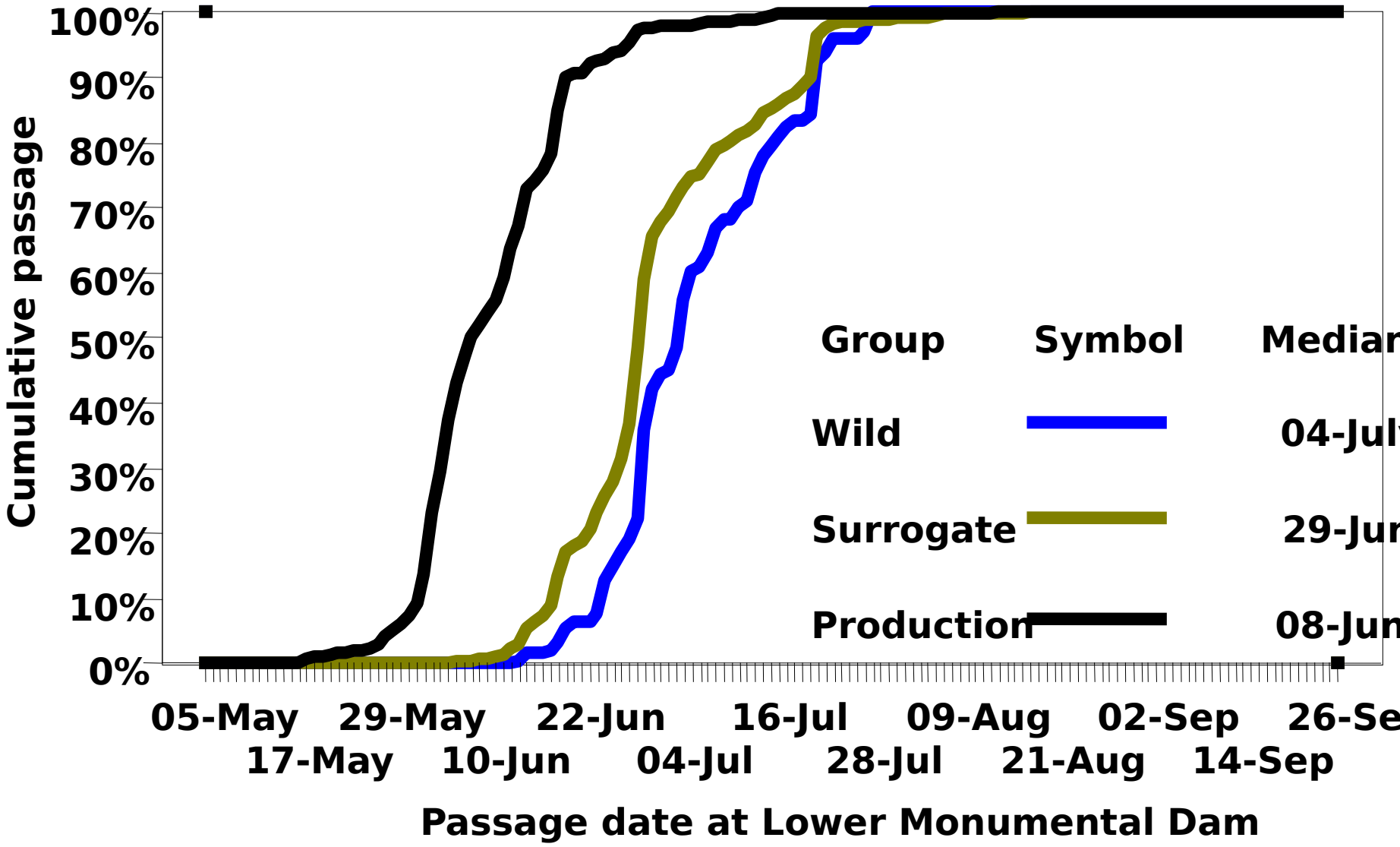
26-Se
Passage date at Little Goose Dam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Surrogate
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Production
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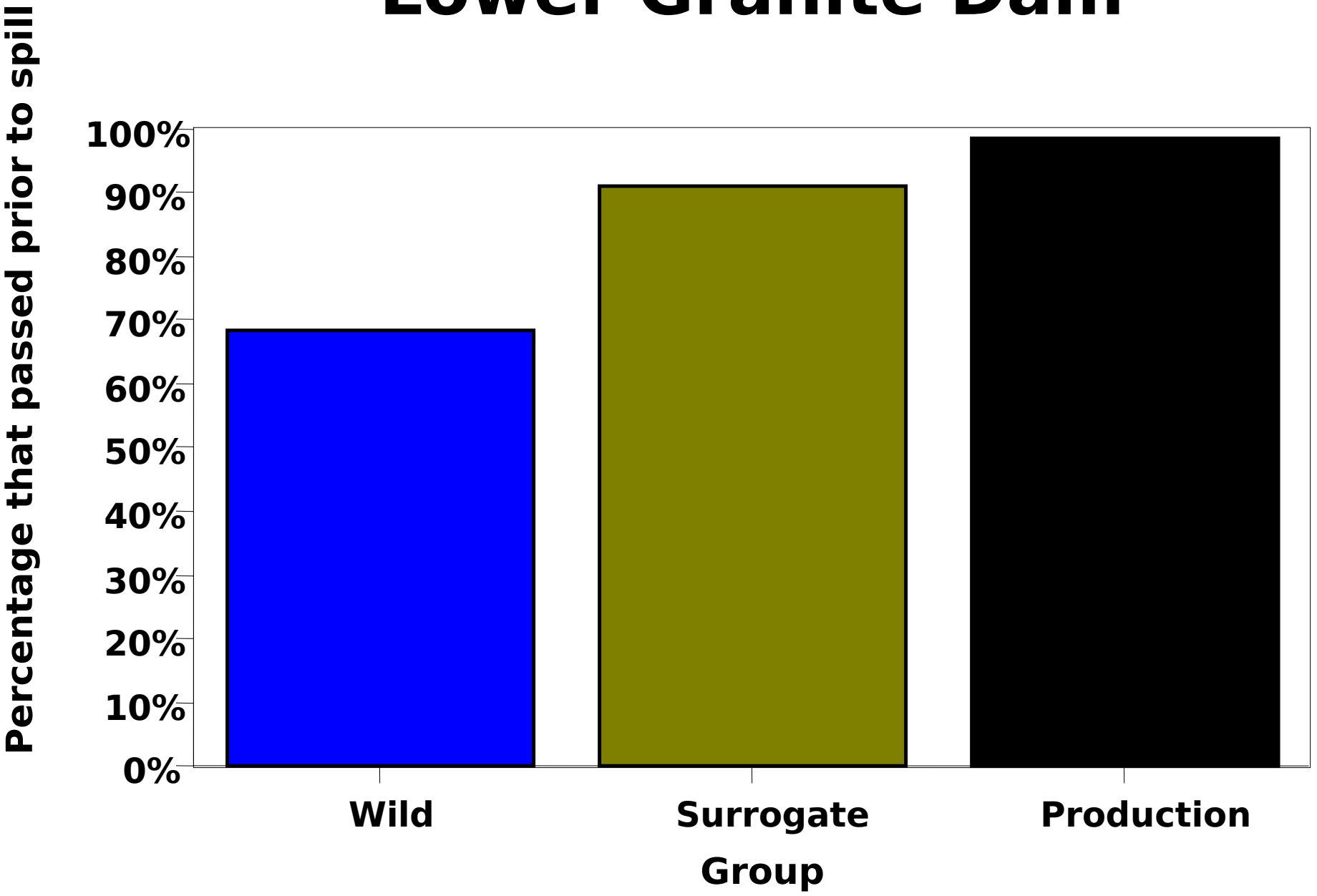
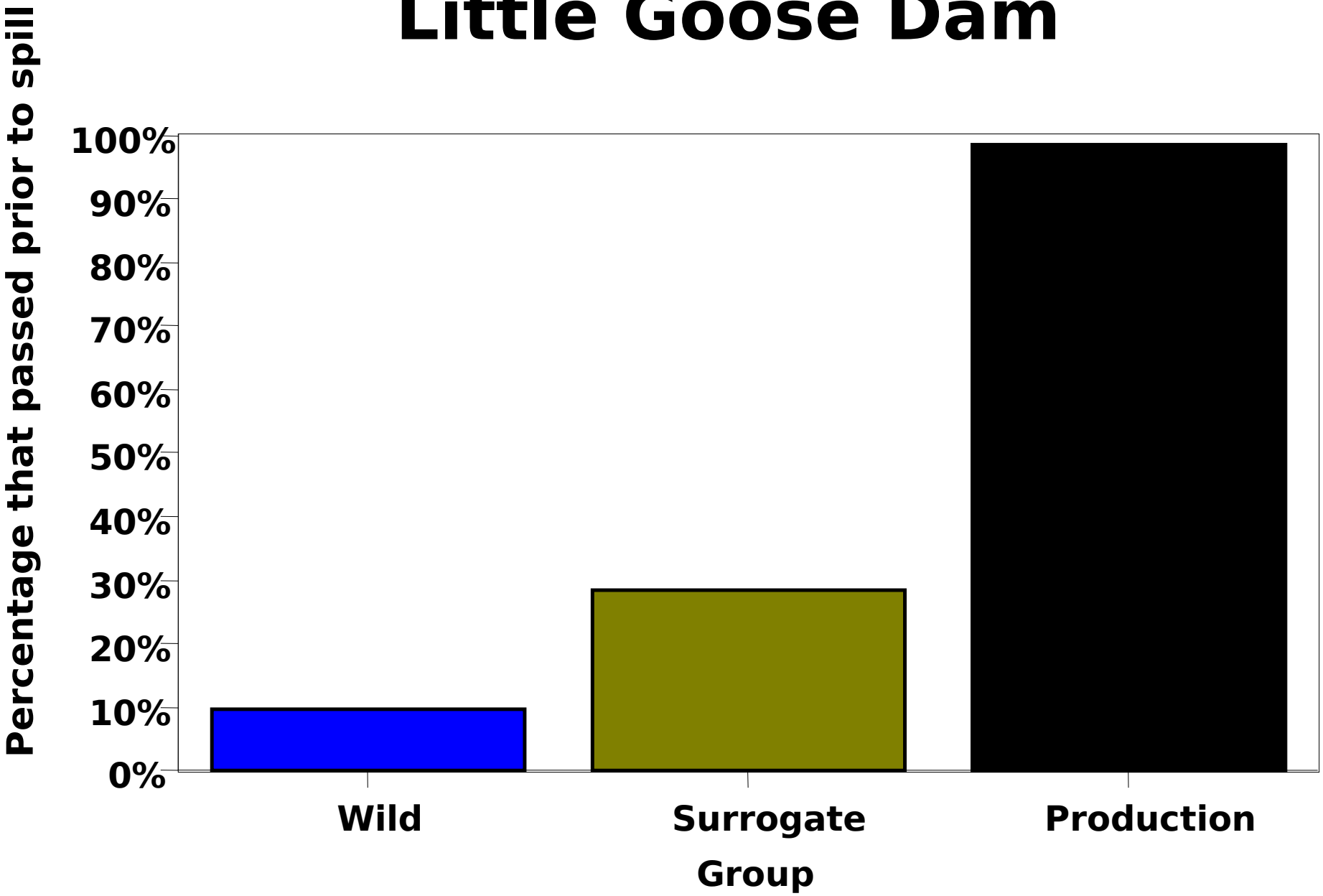
26-Sep
Passage date at Lower Monumental Dam

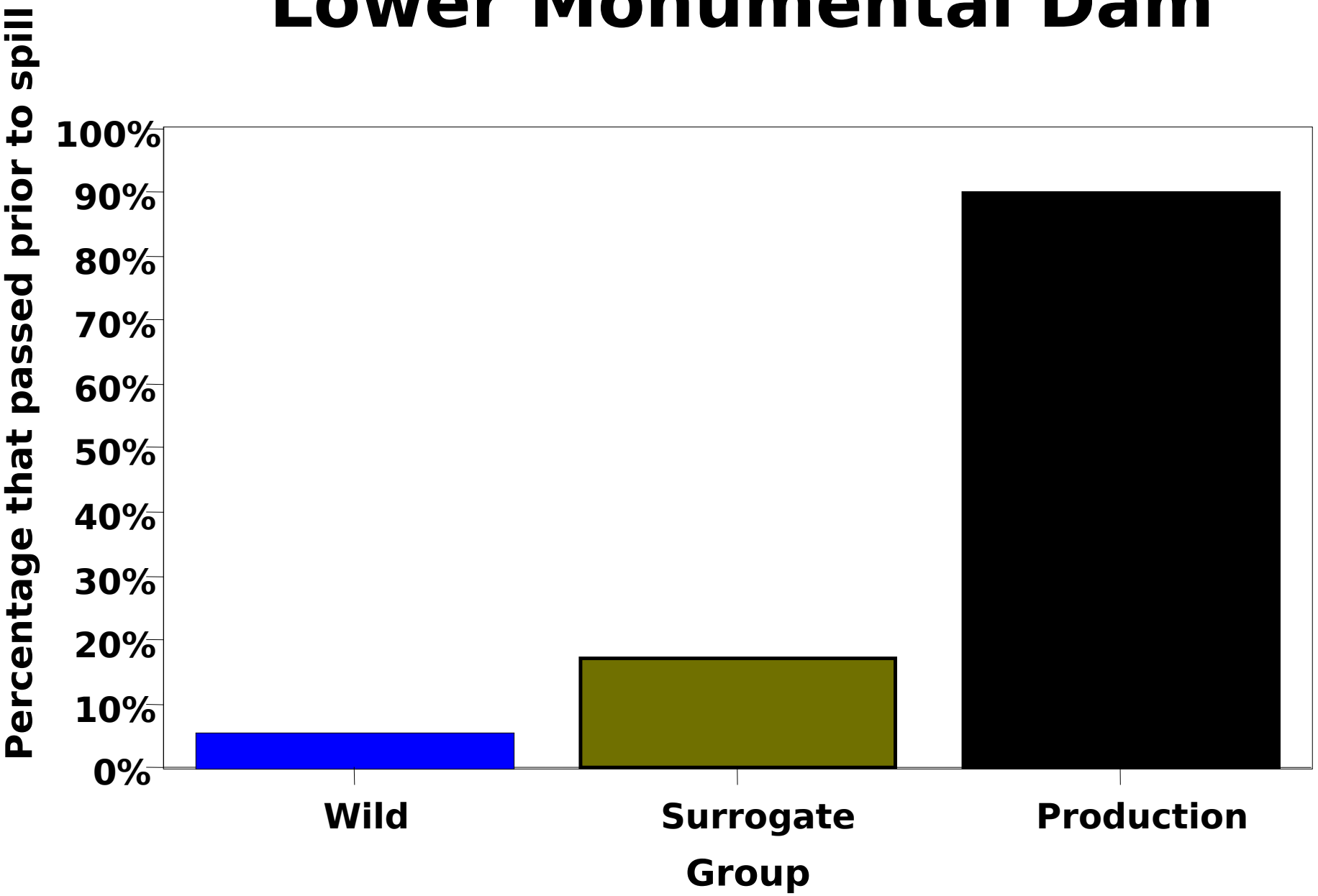
Lower Granite Dam



Little Goose Dam



Lower Monumental Dam



Group	*N*	Travel time to Lower Monumental Dam
Wild	2,135	45 ± 0.2
Surrogate	18,608	41 ± 0.1
Production	10,853	28 ±

Group migrating	*n*	Joint probability of and surviving to the tailrace of Lower Monumental Dam
Wild	2	26 ± 11
Surrogate	2	16 ± 0

Summary of 2005 findings

- **The post-release attributes of wild Snake River subyearlings Snake River surrogates were not identical, but there were g similarities in passage timing, level of exposure to spill, trav the joint probability of migrating and surviving.**

- **Releasing Snake River surrogates over a three-week period might reduce the differences observed in post-release attrib between wild Snake River subyearlings and the Snake River surrogates.**

- **Compared to wild Snake River subyearlings; production subyearlings passed downstream much earlier, were exposed to very little spill, moved seaward rapidly, and had a much higher probab migrating and surviving.**

- **Plans are presently being made to represent production fish 2006 hydrosystem operation study.**